STORAGE OF GREEN OSTRICH SKIN

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Green ostrich skins may be stored for four weeks prior to tanning. Degradation of the skins during storage would decrease skin quality. Tanned ostrich skin is comprised of the grain and corium layers. To assess the effects of different storage conditions on green ostrich skins, the thickness of these layers was compared between pre (at slaughter) and post storage. Ostriches were electrically stunned and killed by bleeding from the carotid artery. The skin was dry-plucked before removal from the carcass. Twelve skins were cut in half along the midline and each skin-half allocated to a different storage group so each skin-half served as control for the other half. Four whole skins were allocated to one of the four storage groups, with two samples taken from each skin. Prior to storage each skin or skin-half was liberally coated with hide salt and each group of skins stacked on separate palettes. All skin samples were taken from the upper belly region and the thickness of the combined grain and corium layers measured in histological sections using a calibrated graticule. Skin thickness data were analysed by random effects regression.

Group 1: Immersed in cooled hide salt solution (25 g/L) for 30 mins, stored at 22°C
Group 2: As Group 1 stored at 4°C
Group 3: Immersed in cooled hide salt solution (25 g/L) and Busan 85\textsuperscript{2} (1.5g/L) bactericide solution for 30 mins, stored at 22°C
Group 4: As Group 3 stored at 4°C

Skins treated with bactericide prior to storage at 22°C for four weeks were significantly thinner compared to those without bactericide treatment (P=0.027). Bactericide had no effect on skins stored at 4°C (P=0.073). Prior to storage there were no differences in skin thickness between the groups (P=0.38): Pre-storage means ± SEM (µm) were: Group 1, 1715 ± 117; Group 2, 1798 ± 165; Group 3, 2017 ± 190 and Group 4, 1920 ± 111.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Bactericide no bactericide</th>
<th>bactericide</th>
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</thead>
<tbody>
<tr>
<td>4°C</td>
<td>-367 ± 152</td>
<td>-11 ± 149</td>
</tr>
<tr>
<td>22°C</td>
<td>497 ± 209</td>
<td>54 ± 201</td>
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Mean change ± SEM change

The data indicate that bactericide treatment is essential to prevent the alteration in the thickness of the ostrich skins stored for 4 weeks at room temperature. Denaturation or unraveling of the collagen fibres would likely result in a thicker connective tissue layer comprised of a decreased density of collagen bundles. As this change is prevented with bactericide treatment we suggest that denaturation of the collagen is likely to be caused by bacterial infection rather than lysosomal autolysis. The effect of increased thickness of the dense connective tissue layers on the physical properties of the skin is currently being investigated.

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